Friday, 5/26/2006 1:50:15 PM

Linda Lacelle

Process Sheet

Customer

: CU-DAR001 Dart Helicopters Services

Job Number **Estimate Number** : 27262

P.O. Number

This Issue

: 10559 · NIA

: 5/26/2006

S.O. No. : NA

Prsht Rev.

First Issue : 27261 **Previous Run**

Type

: LANDING GEAR

Part Number Drawing Number

Drawing Name

Project Number

Drawing Revision Material

Due Date

: D412664203 . D412-664-243 REV &

: HIGH AFT X-TUBE 412

: N/A :8D

: NIA : 6/30/2006

Qty: 1 Um:

Each

Written By

Checked & Approved By Comment

: Est Rev:E 04.02.16 Est Rev:F 06-03-29

Remove Coments on Pick List JLM

Reformat; Added D3189-1 K/DS

Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description:

1.0 DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D412-664-203 CHG 098 nm

2.0

D6009129

Crosstube Material



1.0000 Each(s)/Unit Total: * 1.0000 Each(s)

Pick:

Comment: Qty.:

Qty Part number **Description Batch**

1 D6009-129 Crosstube 3 75947

Check OD = 3.500"; ID = 2.250"

3.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA166

2-Turn first side as per Folio FA166

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243.

4.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET



06/06/01

Dart Aerospace Ltd

W/O:			WORK ORDER CHANGES									
DATE	STEP	-	PROCEDURE CHANGE		Ву	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector			
			•									
									3			

							}					
		•					2					

NCR:			WORK ORDER NON-CONFORMANCE (NCR)									
		Description of NC		Corrective Action Section B	Verification	Annuaral	Annessal					
DATE	STEP	Section A	Initial Design Mgr	Action Description Design Mgr	Sign & Date	Section C	Approval Design Mgr	Approval QC Inspector				
				•		:						
	-											

Part No:	PAR #:	Fault Category:	NCR:	Yes	No	DQA:	Date:
NOTE: Date & initial all entries				QA:	N/C C	losed:	Date:

Friday, 5/26/2006 1:50:16 PM Date: Linda Lacelle User: 4 **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27262 Job Number: Seq. #: Description: **Machine Or Operation:** MORI SEIKI CNC LATHE LARGE MORI SEIKI 5.0 Comment: MORI SEIKI CNC LATHE LARGE 1-Turn second side as per Folio FA166 MS 06/06/01 3-Polish entire outside surface of crosstube 06/06/01 MS 06106101 4- Remove sand and plugs 5-Scribe part # and batch # using vibrating stylus as per Dwg D412-664-243 06/06/02 INSPECT ALL DIM TO DIM SHEET 6.0 QC1 Comment: INSPECT ALL DIM TO DIM SHEET 06/06/01 SECOND CHECK QC8 7.0 oulobla x Comment: SECOND CHECK HAND FINISHING RESOURCE #1 8.0 Comment: HAND FINISHING RESOURCE #1 06-06-07 Chemical Conversion Coat as per QSI 005 4.1 INSPECT WORK/WING WALK QC3/5 9.0 Comment: Inspect work & Chemical conversion Coat 10.0 BENDING BENDING MACHINE Comment: BENDING MACHINE Bend tube as per Dwg D412-664-243 using CNC bender program 412-af and Folio FT010 DIMENSIONAL CHECK 11.0 Comment: DIMENSIONAL CHECK

Dart Aerospace Ltd

W/O:	٧	7 .	٠		WOR	K ORDEI	R CHAI	NGES					,
DATE	STEP	· ·		PROCEDUR	E CHANG	iE	TA.		Ву	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector
. 44	1.1	*	ا بلک بطنور ا درمین			-	e roman	- 37					
4	Control Manager			.)		* ;	= 5					1
			•		ما رق		e jes						
		/1		*		*	7.	1.		~			
1 de 1863.			1	*	3			~ * •		-			
) ·	(, * * * * * * * * * * * * * * * * * * *				•	-9a -			-		
			, ,	. : %.	 			·	I	7.9	1 .		
NCR:	V,	н ј		WORK	ORDER	R NON-CO	NFOR	MANCE	(NCI	R) .	-		<u>.</u>

		Description of NC	* .	Corrective Action Section B	«Verification»	Approval	Approva
DATE	STEP	Section A	Initial Design Mgr	Action Description Sign & Date	Section C	Design Mgr	QC Inspecto

	المائين وا	A Company of the Comp	-4. 		no mandy	the state of the s	
٠	Property of the second	The second secon					
<u>.</u>							* ′
••			·				
-	• 1		,		e e		
	,		- 14			,	
	`					æ	ŧ
			4,0		12.50%		

•		***			., +		
Part No:	PAR #:	Fault Category:	1 mg 2 mg	NCR: Yes No DC	QA:	Date:	
٠.							
NOTE: Date & initial	all entries 💎 🔭 🛶 🛶		100	QA: N/C Close	ed:	Date:	<u></u>

Friday, 5/26/2006 1:50:16 PM Date: Linda Lacelle. User: **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27262 Job Number: Seq. #: Description: Machine Or Operation: LANDING GEAR RESOURCE 1 LANDING GEAR 1 12.0 **Comment: LANDING GEAR RESOURCE 1** 1-Drill pilot holes in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551 4 2-Ream hole to finish size in tube as per Dwg D412-664-243using drill Jig DT8550 & DT8551.Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes. 3-Deburr & Inspect for surface damage. Repair damage within limits as par Dwg D412-664-243 D HAND FINISHING HAND FINISHING RESOURCE #1 13.0 Comment: HAND FINISHING RESOURCE #1 Chemical Conversion Coat as per QSI 005 4.1 14.0 OUTSIDE SERVICE **OUTSIDE SERVICES** Comment: Sub-Contracting OUTSIDE SERVICES Liquid Penetrant Inspection as per QSI 038Or Issue P/O: <u>29/5</u> LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order 15.0 PACKAGING 1 PACKAGING RESOURCE #1 Comment: PACKAGING RESOURCE #1 Inspect for transit damage Ensure copy of NDT results attached to work order. DIMENS/ONAL CHECK 16.0 QC6 Comment: Inspect for damage & ensure results are as per Dwg D412-664-203 SPRAY PAINTING 17.0 Comment: SPRAY PAINTING 1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES									
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector				
07/01/92	13.1	Qc 5 inspect work (Permenant change)	A	07/01/22	,		D7/01/22				
•	*)										

NCR:			WORK ORD	DER NON-CONFORMAN	CE (NCR)	- Manual 1994		
		Description of NC		Verification	Approval	Approval		
DATE	STEP	Section A	Initial Design Mgr	Action Description Design Mgr	Sign & Date	Section C	Design Mgr	QC Inspector
		,						
	,							
								į
					-			
				<u>.</u>				

Part No:	PAR #:	Fault Category:	NCR:	Yes	No	DQA:	Date:
NOTE: Date & initial all entries				QA: N	I/C CI	osed:	Date:

Date: Friday, 04/05/2007 10:46:34 AM Linda Lacelle User: **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Job Number: 27262 Part Number: D412664203 Job Number: Description: Seq. #: **Machine Or Operation:** INSPECT SPRAY PAINT 18.0 QC14 **Comment: Inspect Spray Paint** Wrap in plastic bag to protect from scratches 19.0 D2856600 Abrasion Strip Comment: Qty.: 1.7640 f(s)/Unit Total: 1.7640 f(s) Pick: Batch Qty Part number Description 2 D2856-600(Cut to 10.090") Abrasion Strip 20.0 D28961 1.0000 Each(s) Comment: Qty.: 1.0000 Each(s)/Unit Total: Pick: **Qty Part number** Description Batch 201 07-07-10 Support_ 1 D2896-1 21.0 D31891 Chafing Shield Comment: Qty.: 2.0000 Each(s) 2.0000 Each(s)/Unit Total: Pick: Qty Part number **Description Batch** Chafing Sheild_ 2 D3189-1 Clamp(per MIL-DTL-8783C) 22.0 MS2192028



4.0000 Each(s)/Unit Total:

4.0000 Each(s)

Pick:

Qty Part number 4 MS21920-28

Description Batch

Clamp 103896

Mororog

23.0

MS2192032

Comment: Qty.:

clamp(per MIL-DTL-8783C)



2.0000 Each(s)/Unit Total:

2.0000 Each(s)

clamp(per MIL-DTL-8783C)

batch: (0) 93 [

2.0000 Laon(0)

RT 07-07-60

Friday, 04/05/2007 10:46:34 AM Date: User: Linda Lacelle **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Job Number: 27262 Part Number: D412664203 Job Number: Description: Seq. #: Machine Or Operation: D2792 D3595 Rubber Extrusion 24.0 RUBBER CUSHION Comment: Qty.: Total: 1.0290 f(s) 1.0290 f(s)/Unit Rubber Extrusion CUS HIGH Cut qty 2 5.80" long 0.63" × 5.70" long description qty part# D3595-063-570 2 D2732-058 rubber cushion LANDING GEAR 1 25.0 Comment: LANDING GEAR RESOURCE 1 * PER CHGOOG * Assemble as per Dwg D412-664-203 Instal support with magnobond 6398 per dwg D412-664-203, m/ 01 01 10 cure for 12hrs before packaging. Time & date of application: 2:00 INSPECT WORK TO CURRENT STEP 26.0 QC5 **Comment: INSPECT WORK TO CURRENT STEP** 27.0 PACKAGING RESOURCE #1 Comment: PACKAGING RESOURCE #1 Pick Packing Kit 28.0 AN640A Bolt Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s) Bolt Batch: AN641A Bolt 29.0

2.0000 Each(s)

Comment: Qty.:

Bolt Batch:

2.0000 Each(s)/Unit Total:

Date: Friday, 04/05/2007 10:46:35 AM Linda Lacelle User: **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27262 Job Number: Description: Seq. #: **Machine Or Operation:** Washer AN960JD616 30.0 Comment: Qty.: 18.0000 Each(s)/Unit Total: 18.0000 Each(s) Washer MS21042L6 31.0 Comment: Qtv.: 6.0000 Each(s)/Unit Total: Nut PACKAGING RESOURCE #1 PACKAGING 32.0 Comment: PACKAGING RESOURCE #1 Identify and pack for shipping as per PPP D412-664-203 Location: 33.0 Comment: DOCUMENT CONTROL Inspection Level 21 Employee Labour Cost Adjustment 34.0 EMP COST ADJ Comment: Sub-Contracting Employee Labour Cost Adjustment LANDING GEAR RESOURCE 1 35.0 Comment: LANDING GEAR RESOURCE 1 Assemble as per Dwg D412-664-203 Job Completion QCY INSPIRITED 100% WIT FOR CONPULSER 417 664 203 B27262 (1/1/40

DART AEROSPACE LTD	Work Order:	77262
Description: Crosstube Assembly (412 High Aft)	Part Number:	D412-664-243
Inspection Dwg: D412-664-243 Rev: \$\ \D \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Page 1 of 1

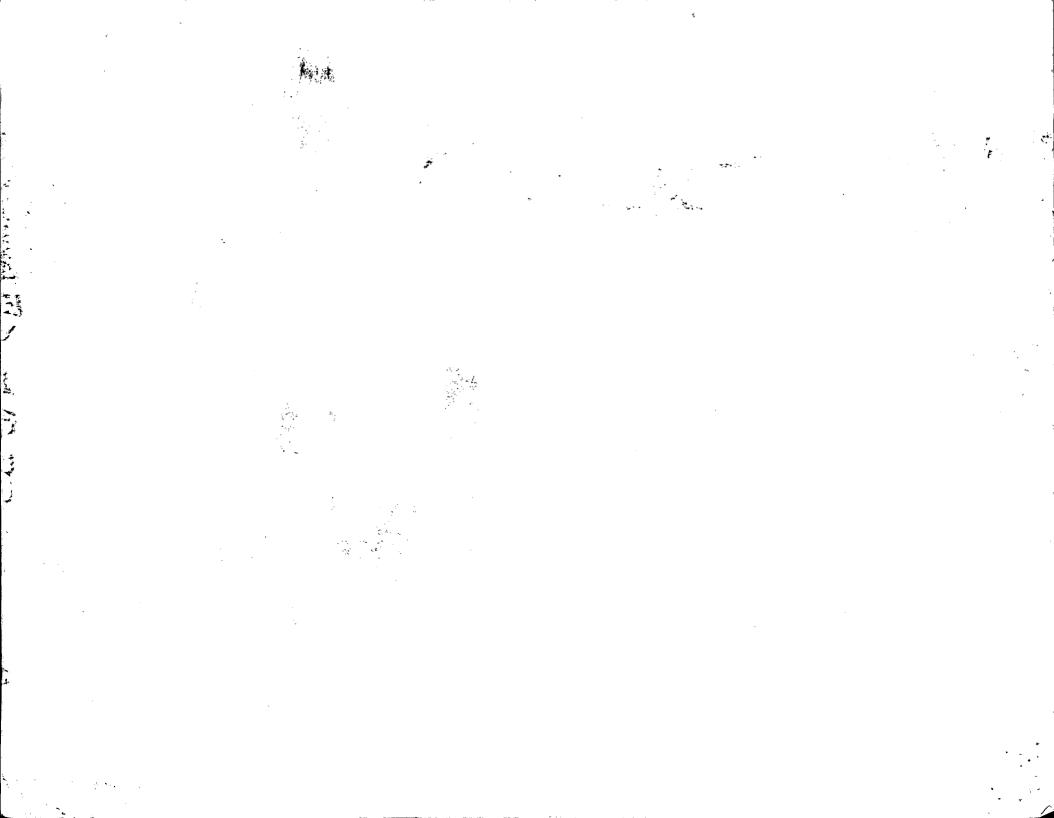
FIRST ARTICLE INSPECTION CHECKLIST

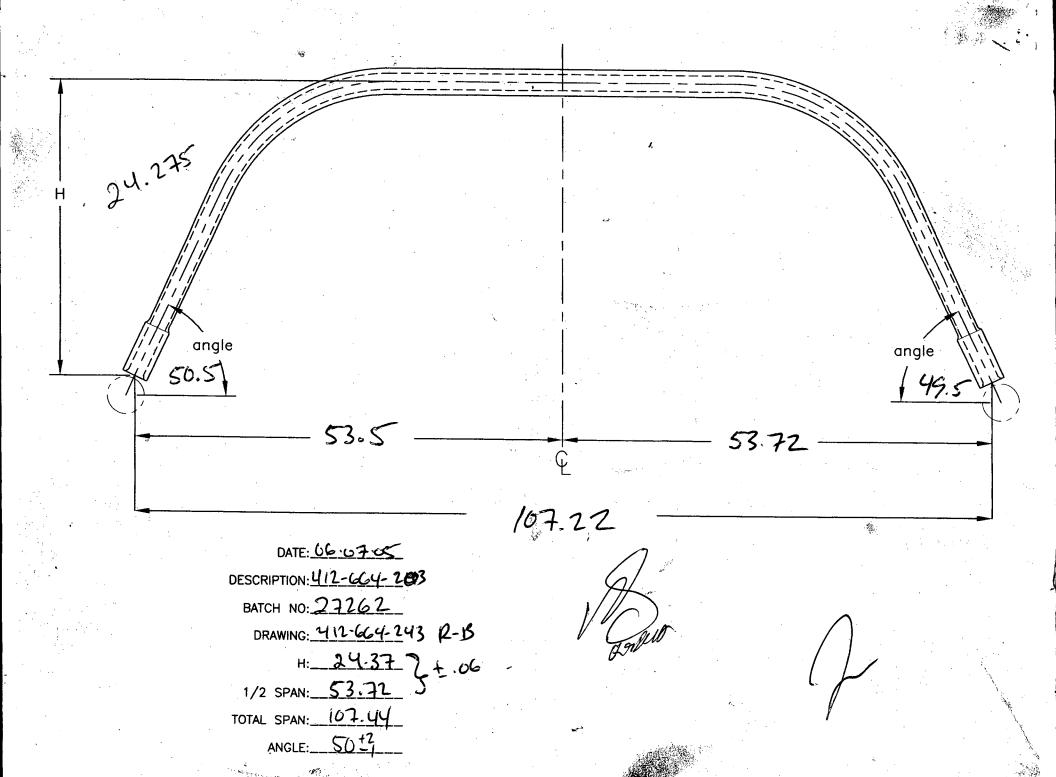
X First Article Prototype

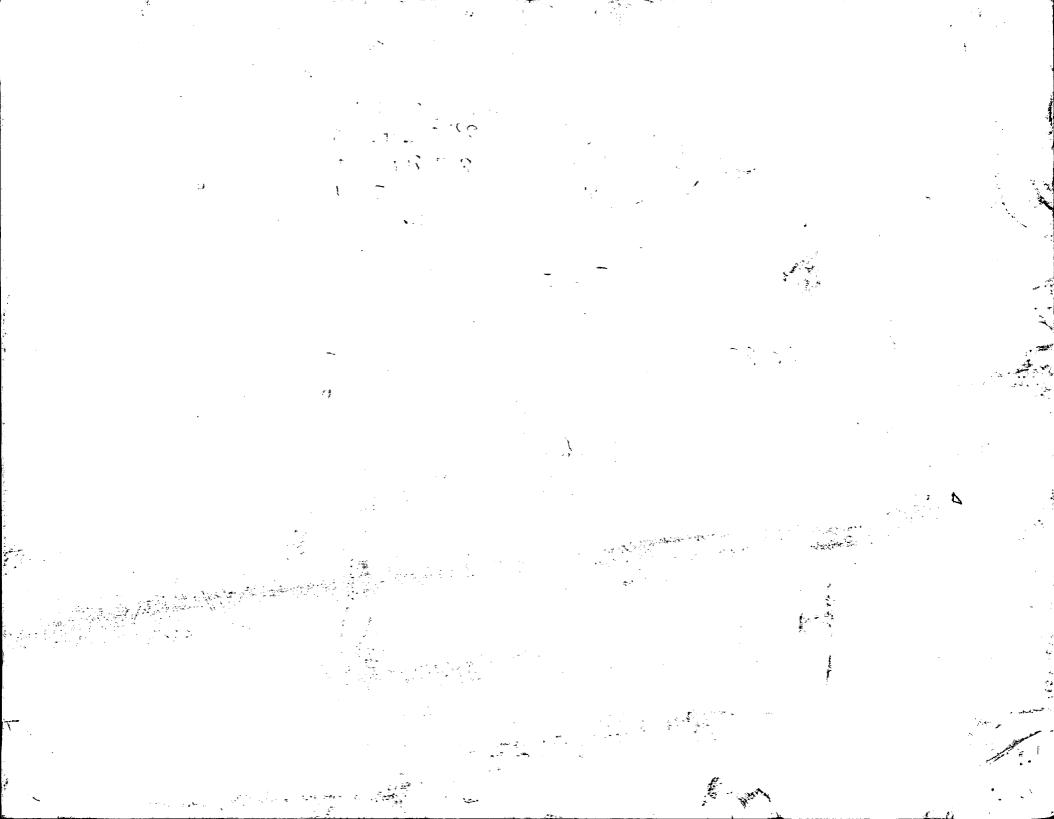
In Dra	spection Sheet wing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
	2.684	+0.005/-0.000	2,687	<u> </u>			
	2.748	+0.005/-0.000	2.752	~			
	2.884	+0.005/-0.000	2.888	~			
	3.019	+0.005/-0.000	3.023	<u></u>			
	3.163	+0.005/-0.000	3.167	<u></u>			
	3.308	+0.005/-0.000	3.312				
⋖	3.429	+0.005/-0.000	3.433	<u></u>			
SIDE	2.990	+0.005/-0.000	2,992	<u></u>			
S	2.618	+0.005/-0.000	2.621	<u> </u>			
	0.200	+/-0.010	-500	<u> </u>			
	R0.063	+/-0.010	.063	~			
	R0.500	+/-0.010	.500				
	4.971	+/-0.001					
		.0.005/.0.000					
	2.684	+0.005/-0.000	3 688	<u> </u>			· · ·
	2.748	+0.005/-0.000	2.752				
	2.884	+0.005/-0.000	<u> ೩.೪೪</u> ٦				
	3.019	+0.005/-0.000	3.022	<u> </u>			
	3.163	+0.005/-0.000	3.166_	V			
	3.308	+0.005/-0.000	3,311				
m	3.429	+0.005/-0.000	3.431	<u> </u>			
SIDE	2.990	+0.005/-0.000	2.994	<u></u>			
S	2.618	+0.005/-0.000	2.622				
	0.200	+/-0.010	,2∞				
	R0.063	+/-0.010	l -				
	R0.500	+/-0.010	-500				
	4.971	+/-0.001	4.971	~			
	124.09	+/-0.020	124.09				

Measured by:	MS	Audited by:	Prototype Approvai:	N/A
Date:	06/06/01	Date: 06/06/62	Date:	N/A

Rev	Date	Change		Revised by	Approved
Α	04.06.16	New Issue	(P/O D412-664-203)	KJ/JLM	
В	06.03.09	Dwg Rev updated		KJ/JLM	









DESI	DESIGN DRAWN BY		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
CHEC	P	APPROVED #	DRAWING NO. REV. D D412-664-243 SHEET 1 OF 3		
DATE	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	TITLE SCALE		
07.	07.03.09		CROSSTUBE ASSEMBLY (412 HI AFT) NTS		
Α		01.10.17	NEW ISSUE		
В		05.02.04	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES		
С		06.10.27	REMOVE D2856-600-1087, ADD D2732-058 & MAGNOBOND 6398 MS21920-32 WAS MS21920-30		
D		07.03.09	REMOVE D2732-058, CHANGE TO D3595-063-570		

RELEASE	٠.
07.04.24	

Qty	Part Number	Description
X	D412-664-243	CROSSTUBE ASSEMBLY (412 HIGH AFT)
1	D6009-129	CROSSTUBE
2	D3595-063-570	RUBBER CUSHION
1	D2896-1	SUPPORT
2	D2856-600-1009	ABRASION STRIP
4	MS21920-28	CLAMP
2	MS21920-30	CLAMP (OR MS21920-32)
2	D3189-1	CHAFING SHIELD
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6009-129 FINISHED LENGTH = 124.09±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 PAINT OUTSIDE PER DART 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN-OFF PART. BLEND OUT EDGE LONGITUDINALY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- INSTALL D2856-600-1009 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE LINACCEPTABLE.

SHOP COPY RETURN TO ENGINEERING

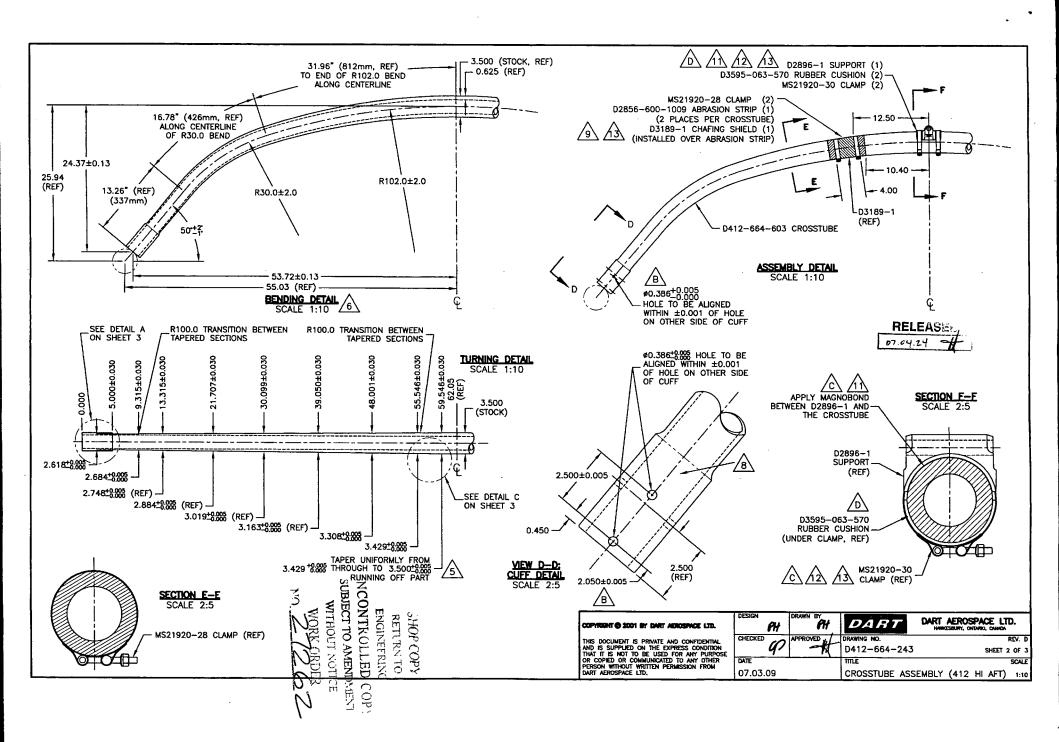
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF UNCONTROLLED COPY D2896-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURESUBJECT TO AMENDMENT FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.

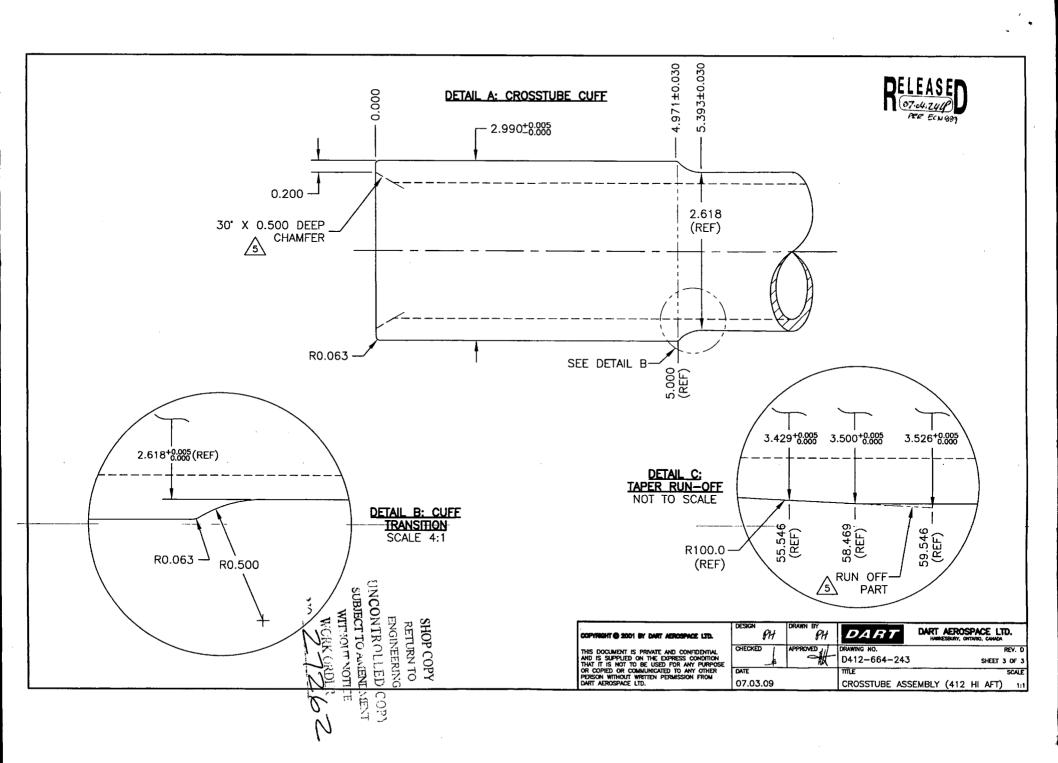
 WITHOUT NOTICE
- 12) INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

WORK ORDER NO. 27262

Copyright 2001 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.







LABOUR MATERIALS

TRAVEL EXPENSES

HOTEL EXPENSES

@

@

@

INVOICE NO.

Hea hAir

NTERNATIONAL (1991) INC.

681 Ave. Lepine, Dorval, Québec H9P 1G3 Tél.: (514) 636-1000 • Fax: (514) 636-0031 **W.0.** N^{0} 35629

A.M.O. Number: 46/90

NON-DESTRUCTIVE TESTING REPORT

				AQ UE	FUNI
	AIRCRAF	T/COMPONENT	MEORMATI	ON -	
REGISTRATION:	MODEL/TYPE:		SERIA	AL NUMBER:	
TOTAL HR/LDG:	OPERATED BY			BASED AT:	
		PECTION REQUIR			
Carry out FPI of (10 Section 4.1.1 (on file Qty (1) P/N D212-6 Qty (3) P/N D212-6 Qty (6) P/N D412-6	664-101 S/N B2798 664-201 S/N's B279	Rivered to HeathAir. 37 389 B20506 & B205	521		
RADIOGRAPHY	ULTRASONIC	PENETRANT	MAGNET	TIC PARTICLE	EDDY CURRE
Fluorescent penetran cross tubes. Note: A Level 3 per Ardrox 970P2 Two (2) cross tubes (B29506 & B29531). Eight (8) cross tubes	t inspection was per netrant was substitut 25E Batch #04B503 P/N D212-664-201) To be reinspected for	ed for the requested FAILED inspection	ce with the abo	more sensitive	e)
THE MAINTENANCE T INSPECTED BY:	E DESCRIBED ABOVE HAS BEEN P HE APPLICABLE STANDARDS OF A	ERFORMED IN ACCORDANCE WITH AIRWORTHINESS		DATE Januar INSPECTION NOT F	ry 23, 2007 Required
JSTOMER: Dart Aerospace	CUST	OMER INFORMA	TION	P.O. NUMBER	2915)

WHITE COPY – INSPECTION FILE • YELLOW COPY – CUSTOMER • PINK COPY – ACCOUNTANT

PST